August 16, 2017

REMEDIAL INVESTIGATION / FEASIBILITY STUDY

Progress Report #13 – July 2017

Prepared for

COLUMBIA FALLS ALUMINUM COMPANY, LLC
2000 Aluminum Drive
Columbia Falls, Flathead County, Montana

ROUX ASSOCIATES, INC.

Environmental Consulting & Management

ROUX

209 Shafter Street, Islandia, New York 11749 ♦ 631-232-2600

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A. Project Schedule

1.0 INTRODUCTION

This Progress Report (Report) presents a summary of activities completed during the period of July 2017, on behalf of Columbia Falls Aluminum Company, LLC (CFAC), for the Remedial Investigation / Feasibility Study (RI/FS) being performed at the Anaconda Aluminum Co. Columbia Falls Reduction Plant (a/k/a Columbia Falls Aluminum Plant) generally located near Columbia Falls in Flathead County, Montana ("Site"). The RI/FS is being conducted pursuant to the Administrative Settlement Agreement and Order on Consent (AOC) dated November 30, 2015 between CFAC and the United States Environmental Protection Agency (USEPA) (CERCLA Docket No. 08-2016-0002).

This Report provides a description of the actions that have been taken to comply with the AOC during the reporting period and describes work planned for the upcoming reporting period, including an updated project schedule as Appendix A. This report also provides updates regarding the availability of any new, validated sampling data received by CFAC during the reporting period. Lastly, this Report provides an update on any scope revisions and/or project delays encountered and solutions implemented to address any changes.

2.0 WORK COMPLETED

This Section provides a summary of activities completed or ongoing in July 2017.

2.1 Preparation of Response to Comments on Draft Phase I Site Characterization Data Summary Report and Screening Level Ecological Risk Assessment Summary Report

CFAC/Roux Associates received comments on the draft Phase I Site Characterization Data Summary Report (Data Summary Report) and draft Screening Level Ecological Risk Assessment (SLERA) on April 14, 2017 from USEPA and on April 17, 2017 from MDEQ. CFAC/Roux Associates submitted responses on May 26, 2017 to the comments provided by USEPA and MDEQ. The responses to comments were reviewed by USEPA and MDEQ in June 2017. Additional comments from USEPA were provided on June 13, 2017 and additional comments from MDEQ were provided on June 20, 2017. CFAC/Roux Associates reviewed the additional comments and submitted responses to the comments to USEPA/MDEQ on July 27, 2017. CFAC/Roux Associates also revised the Data Summary Report as per the comments from both USEPA and MDEQ and a revised Data Summary Report was also submitted to USEPA/MDEQ on July 27, 2017. CFAC/Roux Associates also continued working on revising the SLERA as per the additional USEPA/MDEQ comments in July 2017. The revised SLERA will be resubmitted to USEPA and MDEQ for review in August 2017.

2.2 Preparation of the Groundwater and Surface Water Data Summary Report

The Phase I Site Characterization Scope of Work described in the RI/FS Work Plan and Phase I Sampling and Analysis Plan included four rounds of surface water and groundwater sampling. The fourth and final round of sampling was completed in June 2017. Data collected from the fourth round of sampling was submitted for data validation in July 2017 and is expected to be completed in August 2017.

As discussed with USEPA/MDEQ, the results of all four rounds of sampling will be included in a data summary report. The Groundwater and Surface Water Data Summary Report (GW and SW Data Summary Report) will also include a summary of slug testing field activities and data evaluation (see Section 2.3). The GW and SW Data Summary Report is expected to be submitted to USEPA/MDEQ for review in October 2017.

2.3 Slug Testing

Roux Associates performed pneumatic and mechanical slug testing at Site monitoring wells in July 2017. The work was completed in accordance with the Phase I SAP Modification #11, which was submitted to USEPA on June 12, 2017 and approved by USEPA on June 14, 2017.

As part of the slug testing, Roux Associates field personnel collected field data from 43 monitoring wells at the Site. Pneumatic slug testing methods were generally utilized at all locations where the water table was determined to be above the top of the monitoring well screen. Mechanical slug testing methods were utilized at locations with insufficient water for pneumatic testing or at well locations with slow stabilization and recovery periods.

Table 1 below provides a summary of the well locations that were slug tested and the method that was utilized at each location. Note that monitoring well CFMW-018 was not tested due to there being an insufficient amount of the water in the well.

Table 1. Slug Testing Well Locations – July 2017

Well Name	Type of Test	Well Name	Type of Test
CFMW-002	Pneumatic/Mechanic	**CFMW-034**	Pneumatic
CFMW-003	Pneumatic	**CFMW-035**	Pneumatic
CFMW-003a	Pneumatic	**CFMW-037**	Pneumatic
CFMW-008a	Mechanical	**CFMW-038**	Mechanical
CFMW-010	Pneumatic	**CFMW-040**	Pneumatic
CFMW-011	Pneumatic	**CFMW-042**	Pneumatic
CFMW-011a	Pneumatic	**CFMW-043**	Pneumatic
CFMW-012a	Pneumatic	**CFMW-044a**	Pneumatic
CFMW-016	Mechanical	**CFMW-045**	Pneumatic
CFMW-016a	Pneumatic	**CFMW-045a**	Mechanical
CFMW-018	DRY	**CFMW-047**	Pneumatic
CFMW-019a	Pneumatic	**CFMW-049a**	Pneumatic
CFMW-022	Pneumatic	**CFMW-050**	Pneumatic
CFMW-025a	Pneumatic	**CFMW-053a**	Pneumatic
CFMW-026	Pneumatic	**CFMW-054**	Pneumatic
CFMW-027	Pneumatic	**CFMW-056a**	Pneumatic
CFMW-028	Pneumatic	**CFMW-056b**	Pneumatic

Table 1. Slug Testing Well Locations – July 2017

Well Name	Type of Test	Well Name	Type of Test
CFMW-028a	Pneumatic	**CFMW-057a**	Mechanical
CFMW-029	Pneumatic	**CFMW-059**	Pneumatic
CFMW-032	Pneumatic	**CFMW-059a**	Pneumatic
CFMW-032a	Pneumatic	**CFMW-061**	Pneumatic
CFMW-033	Pneumatic	**CFMW-064**	Pneumatic

Field data collected as part of the slug testing activities will be evaluated utilizing the methods described in the Phase I SAP Modification #11 and Roux's SOP 4.10 for analyzing slug testing data. The slug testing field data and an evaluation of hydraulic conductivities determined from review of the field data will be provided in the GW & SW Data Summary Report.

2.4 Asbestos Landfill Surface Soil Sampling

Surface soil sampling activities at the Asbestos Landfills began on July 31, 2017. The Asbestos Landfill sampling scope of work is described in the Phase I SAP Modification #10, which was submitted to USEPA on May 24, 2017 and approved via email concurrence by USEPA on June 23, 2017. The surface soil sampling activities are expected to be completed in August 2017. A summary of the sampling activities will be provided in the August 2017 Progress Report following completion of the field activities. CFAC and Roux Associates will submit a summary of the sampling results and evaluation of the data to the USEPA in a letter report.

2.5 Investigation Derived Waste Management

Roux Associates collected one waste characterization water sample on June 30, 2017 following the completion of the fourth groundwater sampling event. The water sample was collected in accordance with the Investigation Derived Waste (IDW) Management Plan dated May 9, 2016. Roux Associates provided the sampling results to USEPA and the Oregon Department of Environmental Quality (for notification purposes in the state where the waste will be shipped) on July 27, 2017. The IDW data is being reviewed by USEPA and will be disposed in August 2017. Following disposal of the IDW, the onsite water IDW containers will be cleaned and transported offsite.

2.6 Weekly Reporting, Project Conference Calls, and Project Meetings

Roux Associates submitted a weekly report to the USEPA for each week in July 2017 to document ongoing field activities described above. The weekly reports include a summary of work completed for the prior week, work upcoming for the next week, health and safety, and any additional notable items.

A project update conference call was held with the project team on July 31, 2017. Representatives from USEPA, MDEQ, CFAC, Roux Associates, and CDM Smith were present for the call. The call was held to provide an update on the additional response to comments for the CFAC Phase I Data Summary Report and SLERA Summary Report. Additionally, topics discussed included work progress, schedule, and upcoming public meetings.

3.0 WORK PLANNED FOR NEXT REPORTING PERIOD

This section summarizes the work planned for the next reporting period of August 2017.

3.1 Submittal of the Revised SLERA Summary Report

As described in Section 2.1, additional comments from USEPA were provided on June 13, 2017 and additional comments from MDEQ were provided on June 20, 2017. Revisions to the SLERA Summary Report are ongoing in July 2017. CFAC/Roux Associates will finalize revisions to the SLERA Summary Report in August 2017 and resubmit to the USEPA and MDEQ for review.

3.2 Groundwater and Surface Water Sampling Data Summary Report

As noted in Section 2.2, laboratory data collected from the fourth round of groundwater and surface water sampling was submitted for data validation in July 2017 and is expected to be completed in August 2017. CFAC/Roux Associates will continue reviewing the four rounds of data and will continue preparation of the GW & SW Data Summary Report in August 2017. The GW & SW Data Summary Report is expected to be submitted to USEPA in October 2017.

3.3 Investigation Derived Waste Disposal

As described in Section 2.5, Roux Associates, with the support of Cascade Drilling, will coordinate disposal of the remaining water IDW from groundwater and surface water sampling activities in accordance with the IDW Management Plan. In August 2017, the water IDW will be transported, and disposed of at Chemical Waste Management in Arlington, Oregon.

3.4 Asbestos Landfill Surface Soil Sampling

Surface soil sampling activities at the asbestos landfills will continue in August 2017 in accordance with Phase I SAP Modification #10. A summary of the sampling activities will be provided in the August 2017 Progress Report following completion of the field activities. CFAC and Roux Associates will submit a summary of the sampling results and evaluation of the data to the USEPA/MDEQ in a separate letter report.

3.5 Concrete Sampling and Data Evaluation

Sampling and laboratory analysis of concrete from the Main Plant building is planned to continue during the next reporting period(s), in accordance with the path forward outlined in the email

correspondence from USEPA dated June 28, 2017. As noted in the email correspondence, concrete will be sampled after being removed from the Main Plant Building and after being crushed by Calbag (Demolition Contractor). Concrete samples will be collected at a minimum frequency of one, 30-point composite sample per 5,000 cubic yards of crushed concrete. Results of the concrete sampling activities will be provided to the USEPA and MDEQ for review and concurrence throughout the sampling efforts, prior to using any concrete for demolition backfilling activities.

4.0 DATABASE UPDATES

Validation of laboratory data from the Phase I Site Characterization is being performed by Laboratory Data Consultants (LDC) as a subcontractor to Roux Associates. In July 2017, ten validated datasets from the fourth round of groundwater and surface water sampling were received from LDC. The remaining round four validated data is expected to be received in August 2017 and will be uploaded to the CFAC RI/FS database by Roux Associates.

Validated data will continue to be imported into the project database and managed in accordance with the data management procedures outlined in Section 7.10 of the QAPP. Future progress reports will discuss updates to the project database.

5.0 SCOPE/SCHEDULE REVISIONS

An updated Phase I Site Characterization schedule is attached to this Progress Report in Appendix A. The schedule was updated to reflect progress based on RI/FS activities completed through July 2017. The duration of the response to comments tasks for the Data Summary Report and the SLERA were extended in the project schedule to reflect the additional comments provided by EPA and MDEQ, and to reflect the additional rounds of responses by CFAC/Roux. No changes to the schedule are expected at this time for the remaining Phase I Site Characterization tasks.

On behalf of CFAC, Roux Associates will continue to pursue the overall objectives described in the AOC and the RI/FS Work Plan. Roux Associates will continue to inform the USEPA of completed and upcoming activities pursuant to the requirements of the AOC in future progress reports.

Respectfully submitted,

ROUX ASSOCIATES, INC.

Michael Ritorto
Principal Hydrogeologist /
RI Project Manager

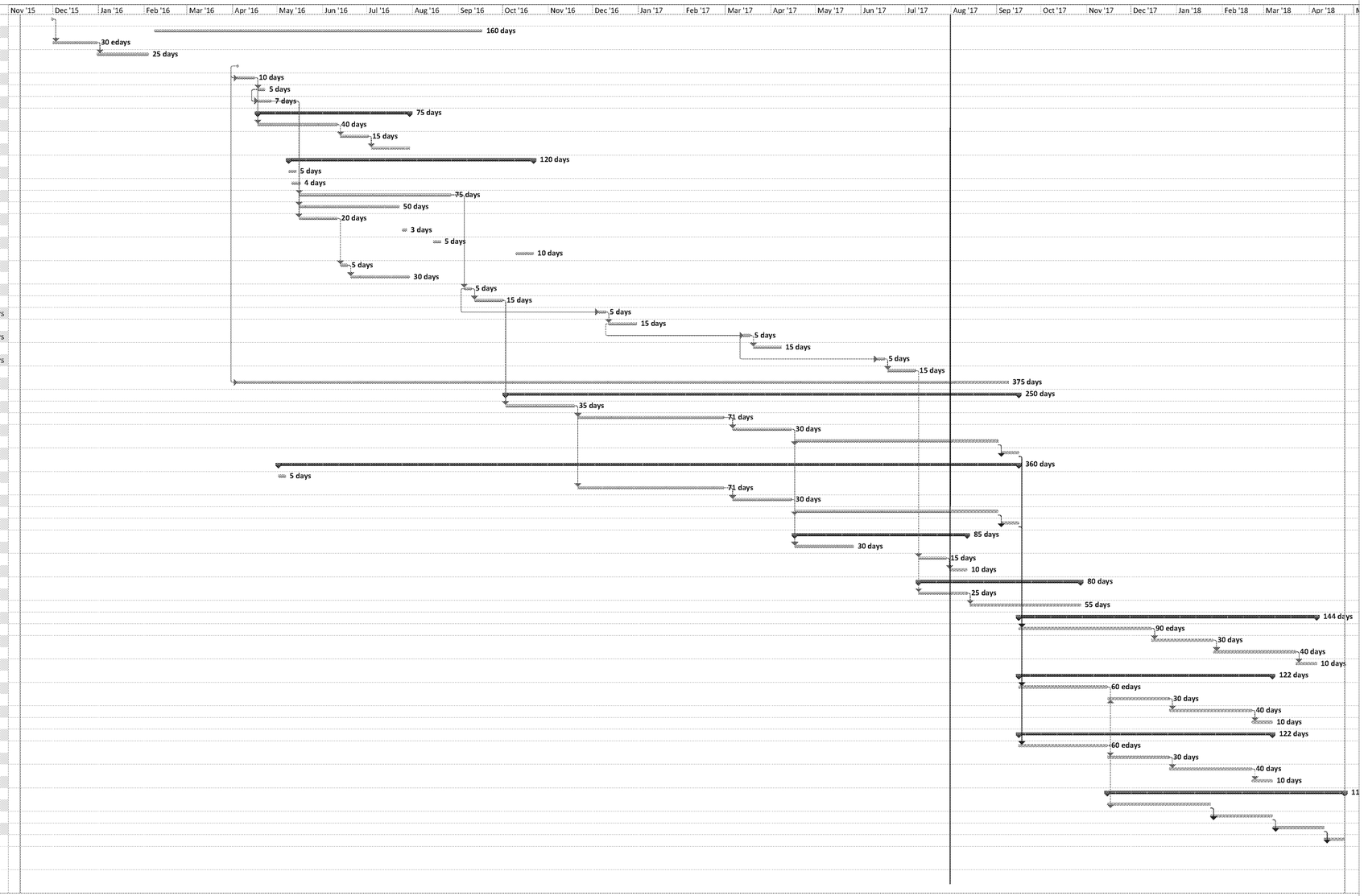
Andrew Baris
Vice President / Principal Hydrogeologist
RI/FS Project Manager

APPENDIX A

Project Schedule

CFAC RI/FS Schedule Updated July 31, 2017

ID	Deliverable	Task Name	Duration	Start	Finish	Company	Predecessors
1		AOC is executed by all parties	1 day	Mon 11/30/15	Mon 11/30/15	EPA/CFAC	
2		Historical Records Review	160 days	Mon 2/8/16	Fri 9/16/16	Roux	
3	X	Draft Health and Safety Plan (HASP)	30 edays	Mon 11/30/15	Wed 12/30/15	Roux	1
4	X	Final Health and Safety Plan (HASP)	25 days	Thu 12/31/15	Wed 2/3/16	Roux	3
5		Site is clear of Snow / Field Work Begins	1 day	Mon 4/4/16	Mon 4/4/16		
6		Pre-Intrusive Task 1 - Site Reconnaisance	10 days	Mon 4/4/16	Fri 4/15/16	Roux	5SS
7		Pre-Intrusive Task 2 - Geophysical Survey	5 days	Mon 4/18/16	Fri 4/22/16	Roux	6
8		Pre-Intrusive Task 3 - Soil Gas Survey	7 days	Mon 4/18/16	Tue 4/26/16	Roux	7SS
9		**SAP Addendum**	**75 days**	**Mon 4/18/16**	**Fri 7/29/16**	**Roux**	
10	X	Draft SAP Addendum	40 days	Mon 4/18/16	Fri 6/10/16	Roux	6
11		EPA Review of Draft SAP Addendum	15 days	Mon 6/13/16	Fri 7/1/16	EPA	10
12	X	Final SAP Addendum	20 days	Mon 7/4/16	Fri 7/29/16	Roux	11
13		**Source Area Investigation - Phase I Site Characterization Field Activities**	**120 days**	**Mon 5/9/16**	**Fri 10/21/16**	**Roux/Hydrometrics**	
14		GPR Utility Mark-Outs	5 days	Mon 5/9/16	Fri 5/13/16	Roux	
15		Clearing / Grading for Drill Rig Access	4 days	Wed 5/11/16	Mon 5/16/16	Roux	
16		Sonic Rig 1	75 days	Mon 5/16/16	Fri 8/26/16	Roux	8FS+10 days
17		Sonic Rig 2	50 days	Mon 5/16/16	Fri 7/22/16	Roux	8FS+10 days
18		Geoprobe	20 days	Mon 5/16/16	Fri 6/10/16	Hydrometrics	8FS+10 days
19		Landfill GPR Survey Field Work	3 days	Mon 7/25/16	Wed 7/27/16	Roux	
20		Test Pitting	5 days	Mon 8/15/16	Fri 8/19/16	Roux	
21		Additional Monitoring Well redevelopment activities	10 days	Mon 10/10/16	Fri 10/21/16	Hydrometrics	
22		Background Area Investigation	5 days	Mon 6/13/16	Fri 6/17/16	Hydrometrics	18
23		Operational Grid Area Investigation	30 days	Mon 6/20/16	Fri 7/29/16	Hydrometrics	22
24		Site-Wide Surface Water Sampling - Event 1	5 days	Mon 9/5/16	Fri 9/9/16	Roux/Hydrometrics	16FS+5 days
25		Site-Wide Groundwater Sampling - Event 1	15 days	Mon 9/12/16	Fri 9/30/16	Roux/Hydrometrics	24
26		Site-Wide Surface Water Sampling - Event 2	5 days	Mon 12/5/16	Fri 12/9/16	Roux/Hydrometrics	24SS+90 edays
27		Site-Wide Groundwater Sampling - Event 2	15 days	Mon 12/12/16	Fri 12/30/16	Roux/Hydrometrics	26
28		Site-Wide Surface Water Sampling - Event 3	5 days	Mon 3/13/17	Fri 3/17/17	Roux/Hydrometrics	27SS+90 edays
29		Site-Wide Groundwater Sampling - Event 3	15 days	Mon 3/20/17	Fri 4/7/17	Roux/Hydrometrics	28
30		Site-Wide Surface Water Sampling - Event 4	5 days	Mon 6/12/17	Fri 6/16/17	Roux/Hydrometrics	28SS+90 edays
31		Site-Wide Groundwater Sampling - Event 4	15 days	Mon 6/19/17	Fri 7/7/17	Roux/Hydrometrics	30
32		Investigation Derived Waste Management/Disposal	375 days	Mon 4/4/16	Fri 9/8/17	Roux	5SS
33		**Phase 1 Site Characterization Data Summary Report**	**250 days**	**Mon 10/3/16**	**Fri 9/15/17**	**Roux**	
34		Data Validation Completion	35 days	Mon 10/3/16	Fri 11/18/16	Data Validator	25
35	X	Draft Phase I Site Characterization Summary Report to EPA/MDEQ	71 days	Mon 11/21/16	Mon 2/27/17	Roux	34
36		EPA review of Draft Phase I Data Summary Report	30 days	Mon 3/6/17	Fri 4/14/17	EPA	35
37	X	Response to EPA/MDEQ Comments on Draft Phase I Data Summary Report	100 days	Mon 4/17/17	Fri 9/1/17	Roux/EPA	36
38	X	Final Submission of Phase I Summary Report to EPA/MDEQ	10 days	Mon 9/4/17	Fri 9/15/17	Roux	37
39		**Screening Level Ecological Risk Assessment (SLERA)**	**360 days**	**Mon 5/2/16**	**Fri 9/15/17**	**Roux**	
40		Completion of SLERA Field Work	5 days	Mon 5/2/16	Fri 5/6/16	Roux	
41	X	Draft SLERA Summary Report	71 days	Mon 11/21/16	Mon 2/27/17	Roux	34
42		EPA review of Draft SLERA Report	30 days	Mon 3/6/17	Fri 4/14/17	EPA	41
43	X	Response to EPA/MDEQ Comments on Draft SLERA Summary Report	100 days	Mon 4/17/17	Fri 9/1/17	Roux/EPA	42
44	X	Final Submission of SLERA Report to EPA/MDEQ	10 days	Mon 9/4/17	Fri 9/15/17	Roux	43
45		**2017 Additional Field Activities**	**85 days**	**Mon 4/17/17**	**Fri 8/11/17**	**Roux**	
46		Preparation of 2017 field activities plan/SAP Mods	30 days	Mon 4/17/17	Fri 5/26/17	Roux	36
47		Pnuematic Slug Testing	15 days	Mon 7/10/17	Fri 7/28/17	Roux	31
48		Asbestos Landfill Soil Sampling	10 days	Mon 7/31/17	Fri 8/11/17	Roux/Hydrometrics	47
49		**Groundwater and Surface Water Sampling Data Summary Report**	**80 days**	**Mon 7/10/17**	**Fri 10/27/17**	**Roux**	
50		Validation of Round 4 sampling data	25 days	Mon 7/10/17	Fri 8/11/17	Data Validator	31
51	X	GW/SW Summary Report to EPA/MDEQ	55 days	Mon 8/14/17	Fri 10/27/17	Roux	50
52		**Candidate Technologies Memo**	**144 days**	**Fri 9/15/17**	**Thu 4/5/18**	**Roux**	
53	X	Draft Candidate Technologies Memo to EPA/MDEQ	90 edays	Fri 9/15/17	Thu 12/14/17	Roux	38
54		EPA review of draft Candidate Technologies Memo	30 days	Fri 12/15/17	Thu 1/25/18	EPA	53
55	X	Response to EPA/MDEQ comments on Candidate Technologies Memo	40 days	Fri 1/26/18	Thu 3/22/18	Roux	54
56	X	Final Candidate Technologies Memo to EPA/MDEQ	10 days	Fri 3/23/18	Thu 4/5/18	Roux	55
57		**Baseline Human Health Risk Assessment Work Plan**	**122 days**	**Fri 9/15/17**	**Tue 3/6/18**	**Roux**	
58	X	Draft BHHRA Work Plan to EPA/MDEQ	60 edays	Fri 9/15/17	Tue 11/14/17	Roux/EHS Support	38
59		EPA review of Draft BHHRA Work plan	30 days	Wed 11/15/17	Tue 12/26/17	EPA	63
60	X	Response to EPA/MDEQ Comments on BHHRA Work Plan	40 days	Wed 12/27/17	Tue 2/20/18	Roux	59
61	X	Final Submission of BHHRA WP to EPA/MDEQ	10 days	Wed 2/21/18	Tue 3/6/18	Roux	60
62		**Baseline Ecological Risk Assessment Work Plan**	**122 days**	**Fri 9/15/17**	**Tue 3/6/18**	**Roux**	
63	X	Draft BERA Work Plan to EPA/MDEQ	60 edays	Fri 9/15/17	Tue 11/14/17	Roux/EHS Support	44
64		EPA reivew of Draft BERA Work Plan	30 days	Wed 11/15/17	Tue 12/26/17	EPA	63
65	X	Response to EPA/MDEQ Comments on BERA Work Plan	40 days	Wed 12/27/17	Tue 2/20/18	Roux	64
66	X	Final Submission BERA Work Plan to EPA/MDEQ	10 days	Wed 2/21/18	Tue 3/6/18	Roux	65
67		**Phase II Remedial Investigation Sampling and Analysis Plan**	**115 days**	**Wed 11/15/17**	**Tue 4/24/18**	**Roux**	
68	X	Draft Phase II Sampling and Analysis Plan to EPA/MDEQ	50 days	Wed 11/15/17	Tue 1/23/18	Roux	58,63
69		EPA reivew of draft Phase II Sampling and Analysis Plan	30 days	Wed 1/24/18	Tue 3/6/18	EPA	68
70	X	Response to EPA/MDEQ Comments on Phase II Sampling and Analysis Plan	25 days	Wed 3/7/18	Tue 4/10/18	Roux	69
71	X	Final Phase II Sampling and Analysis Plan	10 days	Wed 4/11/18	Tue 4/24/18	Roux	70



Scheduled Task Task Progress Complete Summary